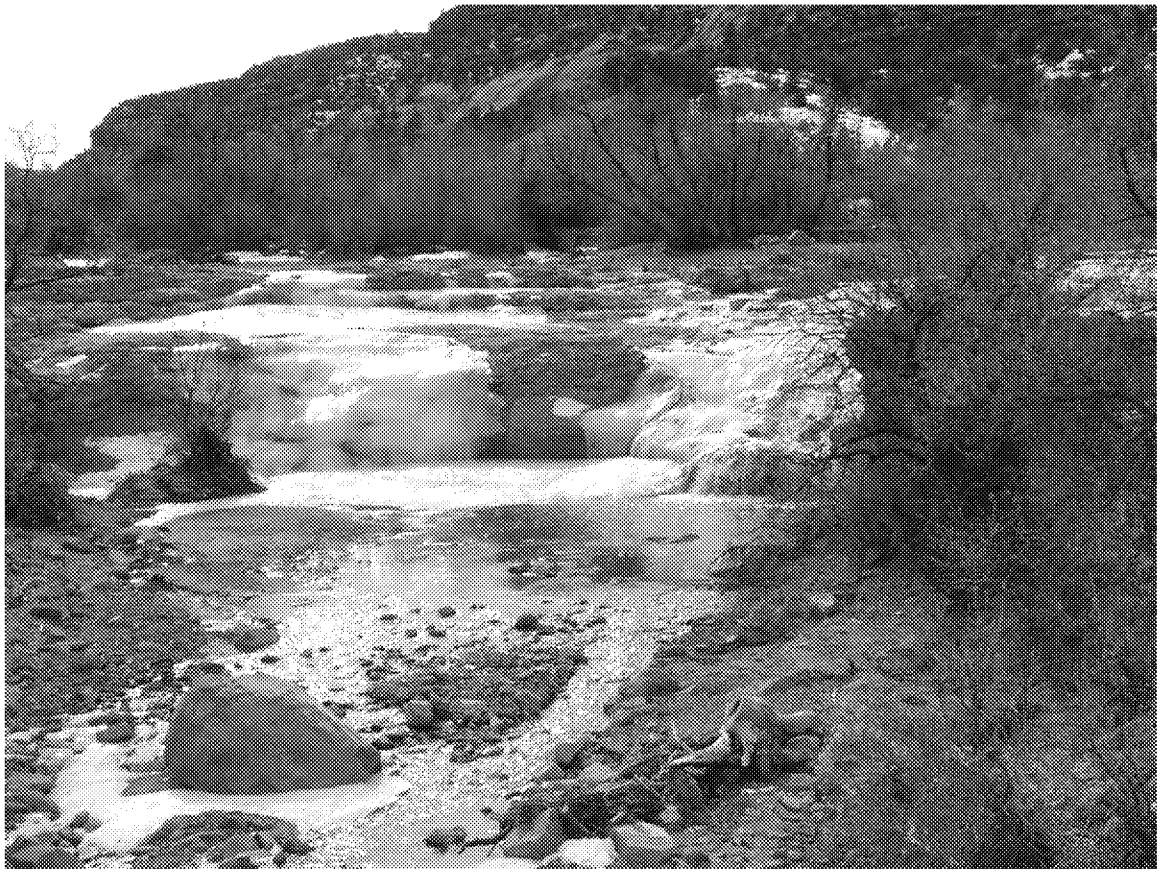
Navajo Nation – Lower San Juan River Watershed – Surface Water Quality Assessment Report (Integrated 305(b) Report and 303(d) Listing)



Piute Canyon on January 29, 2014

Prepared by:

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February 7, 2019

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1.0 Background and Purpose

The objective of the United States Clean Water Act (USCWA) is to "*restore* and *maintain* the chemical, physical, and biological integrity of the Nation's Waters" (USGPO, 1988). In order to meet this objective, and exert its sovereign authority to protect its water resources, the Navajo Nation codified the Navajo Nation Clean Water Act (NNCWA 1999) in July 1999. The importance of water to the Navajo Nation is clearly demonstrated by the adoption of the NNCWA, with the Navajo Nation being only one of a few tribes or states to adopt a clean water act. The NNCWA provides the legislative authority to allow the Navajo Nation to fulfill the USCWA requirements.

In order to *restore* and *maintain* the chemical, physical, and biological integrity of the Nation's Water, states and federally recognized tribes adopt water quality standards which protect the uses of the Nation's water bodies. Water quality standards are narrative and numeric criteria used as benchmarks to determine if a designated use for a water body is being attained. NNCWA Section 103(a) (2) (A) provides for "the establishment of water quality standards to protect fish and wildlife and the domestic, cultural, agricultural and recreational uses of the waters of the Navajo Nation." This is consistent with the "fishable and swimmable goal" set forth in USCWA Sections 101(a) (2) and 303(c) (2). NNCWA Sections 201(b) and (c) requires that designated uses be established for public water supplies, the protection and propagation of fish and wildlife, recreational purposes, agricultural (including livestock watering), industrial, cultural, and other uses, and to establish criteria to protect the designated uses.

The Navajo Nation first codified the 1999 Navajo Nation Water Quality Standards (1999 NNWQS) in July 1999 (NNEPA 1999). On January 20, 2006 the US Environmental Protection Agency (USEPA) approved the Navajo Nation's application to administer the Water Quality Standards and Certification Programs under the federal Clean Water Act's Sections 303 and 401. On March 26, 2009, the USEPA approved the 2007 Navajo Nation Surface Water Quality Standards (2007 NNSWQS) (NNEPA 2008).
The Navajo Nation Surface Water Quality Standards 2015 (NNSWQS 2015) is the revision to the 2007 NNSWQS. The 2015 NNSWQS were approved by the Navajo Nation Council Resources and Development Committee on May 23, 2017.

The Navajo Nation Environmental Protection Agency's National Pollutant Discharge Elimination System / Water Quality Program (NNEPA WQP) is responsible for implementing the requirements of the USCWA and the NNCWA within the Navajo Nation.

This report fulfills the federal Clean Water Act (CWA) Section 305(b) reporting requirements, CWA 303(d) listing requirements, EPA's CWA § 106 Tribal Guidance, Chapter 8 and Appendix A, assessment reporting requirements, and FY 2018-2019 National Water Program Guidance Measures WQ-06a. It also fulfills assessment reporting requirements in the "Navajo Nation Environmental Protection Agency Water Quality/Navajo Nation Pollutant Discharge Elimination System Program, Federal Clean Water Act Performance Partnership Grant" Work Plan.

The purpose of this report is to assess the Lower San Juan River Watershed surface water quality data obtained by the NNEPA WQP by:

1. Presenting the surface water quality data;
2. Comparing the surface water quality data to the latest version of the NNSWQS to see if standards are being met; and
3. Determine if uses designated for surface waters are being supported using the methods described in the February 20, 2008 NNEPA document entitled: "Guidance for Assessing the Quality of Navajo Nation Surface Waters to Determine Impairment" (Integrated 305(b) Reporting and 303(d) Listing) (NNEPA Impairment Guidance).

The Navajo Nation Lower San Juan River Watershed Surface Water Quality Assessment Report is intended to be a living document, which can be updated to include the latest surface water quality data. The NNEPA WQP welcomes all comments that will assist in revising this report in the future.

2.0 Lower San Juan River Watershed

The Lower San Juan River Watershed (Figure 2.0) is located on approximately 1526 square miles within the Navajo Nation. The United States Geological Survey (USGS) 8-digit Hydrologic Unit Code (HUC) for the Lower San Juan River Watershed is 14080205 (USGS 1987). The NNEPA WQP watershed code for the Lower San Juan River Watershed is 29. Detailed geographic locations of the watershed sampling sites may be found in Section 4.0. An atlas of water bodies with known lengths and areas assessed by the NNEPA WQP within this watershed are listed in Table 2.0. There are 192.46 miles of surface waters in this watershed.

Figure 2.0 – Lower San Juan River Watershed (1526 square miles)

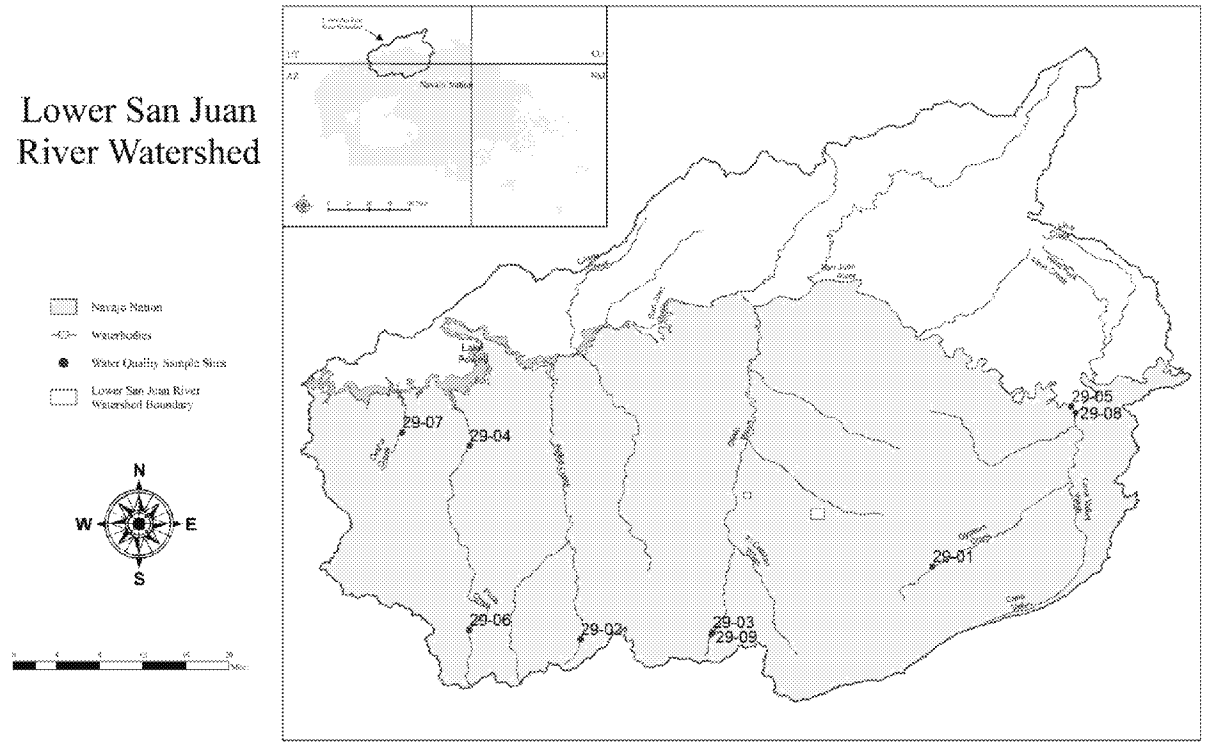


Table 2.0 – – Atlas of Assessed Surface Water Bodies with Known Lengths/Areas

(from Navajo Nation Department of Water Resources - March 31, 2009 and topographic map measurements)

Surface Water Body Name Within The Navajo Nation	
Streams (Rivers, Washes, Arroyos, Creeks)	**Length (miles)**
Desha Creek	7.00 miles
Gypsum Creek	26.57 miles
Nokai Canyon	33.32 miles
Oljeto Wash	39.57 miles
Piute Canyon	26.00 miles
Lower San Juan River	60.00 miles
Total Stream Miles Assessed (minimum)	**192.46 miles**

3.0 Lower San Juan River Watershed Surface Water Quality Data Collection Activities

Monitoring and water quality sampling of the Lower San Juan River Watershed was conducted using professional experience and in accordance with the NNEPA WQP June 1, 2012 "Quality Assurance Plan

for Surface Water Data Collection" or previous quality assurance plans. Measurements of physical/ chemical characteristics and stream discharge were made. Samples were obtained and submitted to an analytical laboratory for analyses. Quality Assurance and Quality Control samples were also obtained.

4.0 Lower San Juan River Watershed Surface Water Quality Data Assessment

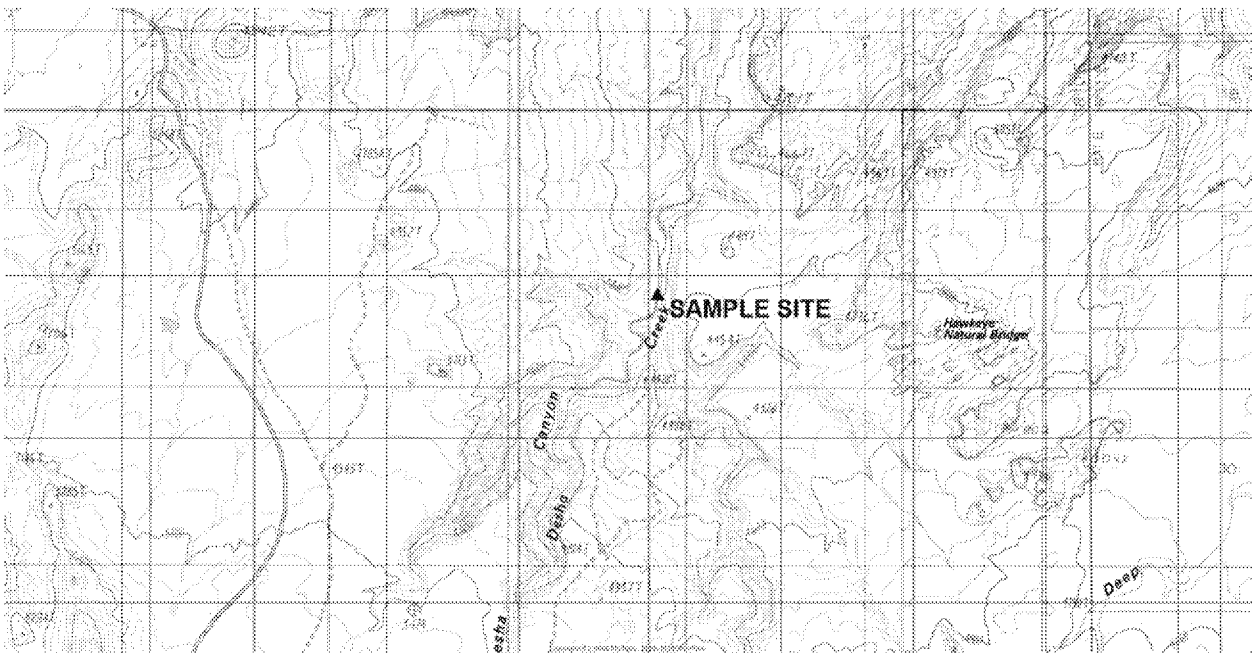
The following tables provide detailed information on the Lower San Juan River sample site. When available a site photograph is provided. The sample site name used for sampling is provided along with the alias used to locate the sample site on the watershed map in Section 2.0. The total number of years sampled is provided along with years sampled during the assessment period. The assessment period is the consecutive time period where a minimum number of samples must be obtained in order to determine designated use support. In most instances it is a three year consecutive period where a minimum of five samples must be obtained. (Please refer to the NNEPA Impairment Guidance). Water quality data at each site was compared to the numeric standards in the NNSWQS 2015. Uses designated for each water body in the NNSWQS 2015 are listed in each table. These uses may include Domestic Water Supply (Dom), Primary Human Contact (PrHC), Secondary Human Contact (ScHC), Fish Consumption (FC), Aquatic & Wildlife (Acute and Chronic) (A&W (A) and A&W (C)), Agricultural Water Supply (AgWS), and Livestock Watering (LW). Exceedances of the numeric standard are provided for any analyte for both the individual analyte and for the analytes corresponding to each designated use. Also provided are the percentages of exceedances from the number of samples obtained. The letter "n" refers to the number of samples obtained.

Analytes are listed in each table only if they have been found to have exceeded the numeric standard at any surface water sample site within the watershed. If, for example, aluminum is listed as an analyte at "Site X" but did not exceed the numeric standard at "Site X", it is listed because it did exceed the numeric standard at another location within the watershed, "Site A". The purpose of this is to try to understand the distribution of the analyte within the watershed.

The category of designated use support from the NNEPA Impairment Guidance may be found at the end of each table. Designated use support categories are determined, in part, by comparing the analytical result at each sample site to the NNSWQS 2015. The NNEPA WQP may also choose to list surface waters as impaired if it pursues primacy granted by USEPA for federal Clean Water Act Section 303(d).

To obtain the complete set of surface water quality analytical data from this watershed used in these tables please call 505-368-1037.

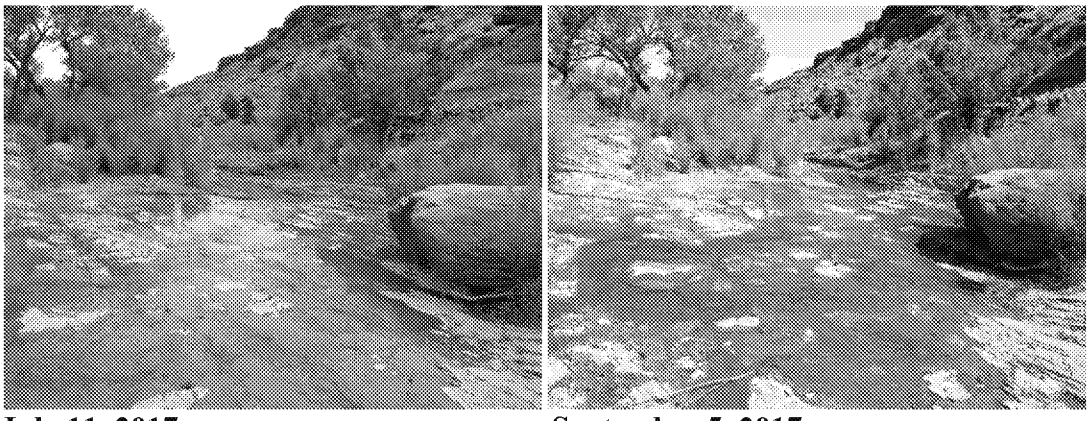
Map 4.1 – Desha Creek Sample Site 29DESHACRE07



Photographs 4.1 – Desha Creek Sample Site 29DESHACRE07

July 28, 2016 **August 22, 2016**

Photographs 4.1 – Desha Creek Sample Site 29DESHACRE07 (continued)



July 11, 2017 **September 5, 2017**

Table 4.1 – Desha Creek – Water Quality Data Assessment Table

Site 29DESHACRE07

Site	Alias	Location
29DESHACRE07	29-07	Desha Creek

Total		Assessment period	
Year(s) sampled	# of Sample Events	Year(s) sampled*	# of Sample Events*
2016-2017	5	2016-2017	5

*Note that not all analytes were necessarily sampled each sample event.

	All samples		Assessment period	
Designated Use	Total number of exceedances	Total analytes exceeded	Total number of exceedances	Total analytes exceeded
FC	0	0	0	0
PrHC	0	0	0	0
ScHC	0	0	0	0
A&WHbt (A)	0	0	0	0
A&WHbt (C)	0	0	0	0
AgWS	0	0	0	0
LW	0	0	0	0

Table 4.1 – Desha Creek – Water Quality Data Assessment Table (continued)

Analyte	Domestic Water Supply*					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	1	5	20.0%	1	5	20.0%
Barium (T)	0	5	0.0%	0	5	0.0%
Beryllium (T)	0	5	0.0%	0	5	0.0%
Boron (T)	0	5	0.0%	0	5	0.0%
Chromium (T)	0	5	0.0%	0	5	0.0%
Gross alpha (Adj)	0	5	0.0%	0	5	0.0%
Lead (T)	0	5	0.0%	0	5	0.0%
Manganese (T)	0	5	0.0%	0	5	0.0%
Radium-226/228 (T)	0	1	0.0%	0	1	0.0%
Thallium (T)	0	5	0.0%	0	5	0.0%

*Not a designated use for this water body, but results are provided for reference.

Analyte	Fish Consumption					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Mercury (T)	0	5	0.0%	0	5	0.0%
Thallium (T)	0	5	0.0%	0	5	0.0%

Analyte	Primary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	0	5	0.0%	0	5	0.0%
Lead (T)	0	5	0.0%	0	5	0.0%

Analyte	Secondary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Lead (T)	0	5	0.0%	0	5	0.0%

Analyte	Aquatic and Wildlife Habitat (Acute)					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Selenium (T)	0	5	0.0%	0	5	0.0%

Table 4.1 – Desha Creek – Water Quality Data Assessment Table (continued)

Analyte	Aquatic and Wildlife Habitat (Chronic)					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (AS)	0	5	0.0%	0	5	0.0%
Mercury (T)	0	5	0.0%	0	5	0.0%
Selenium (T)	0	5	0.0%	0	5	0.0%

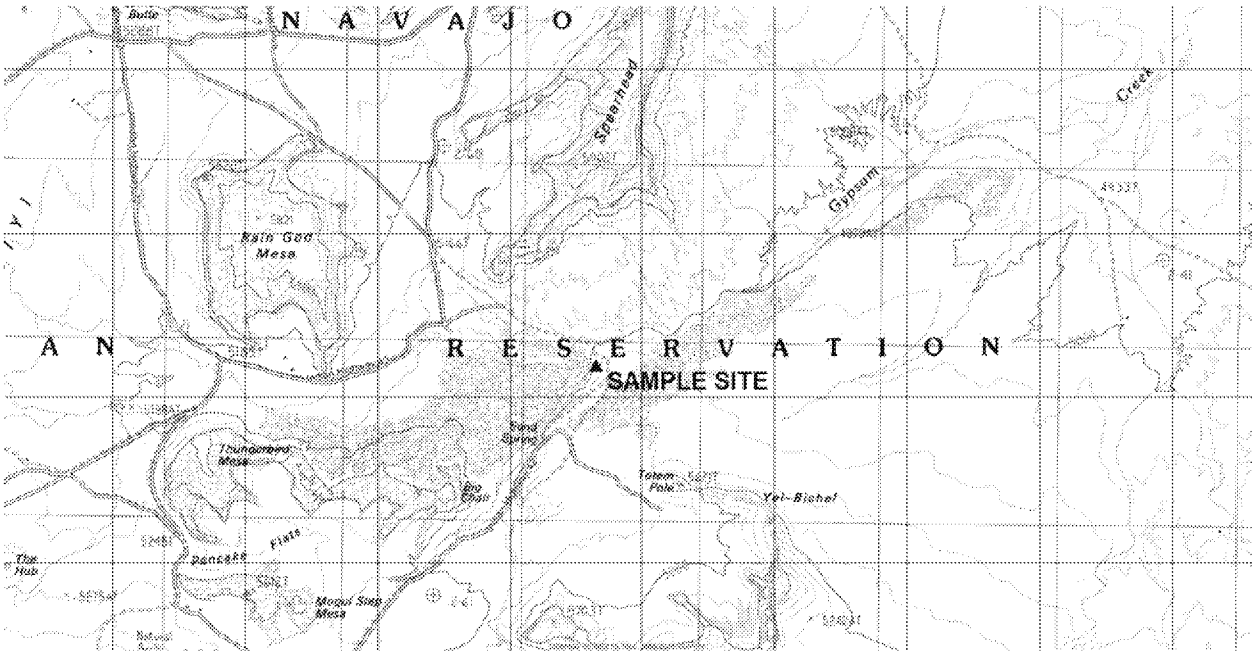
Analyte	Agricultural Water Supply					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (T)	0	5	0.0%	0	5	0.0%
Molybdenum (T)	0	5	0.0%	0	5	0.0%
Radium-226/228 (T)	0	1	0.0%	0	1	0.0%
Selenium (T)	0	5	0.0%	0	5	0.0%

Analyte	Livestock Watering					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Gross alpha (Adj)	0	5	0.0%	0	5	0.0%
Lead (T)	0	5	0.0%	0	5	0.0%
Radium-226/228 (T)	0	1	0.0%	0	1	0.0%
Vanadium (T)	0	5	0.0%	0	5	0.0%

4.1 Desha Creek - Designated Use Support and Impairment Determination

- **Was the minimum number of samples to determine designated use support obtained during the assessment period? Yes.**
- **Category of Designated Use Support: Category 1 - All designated uses are supported.**

Map 4.2.1 – Gypsum Creek Sample Site 29GYPSUMCR01

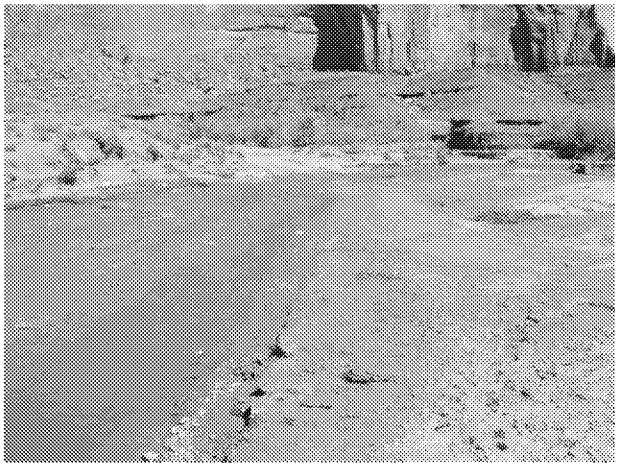


Photographs 4.2.1 – Gypsum Creek Sample Site 29GYPSUMCR01

April 3, 2003

April 22, 2004

Photographs 4.2.1 – Gypsum Creek Sample Site 29GYPSUMCR01 (continued)

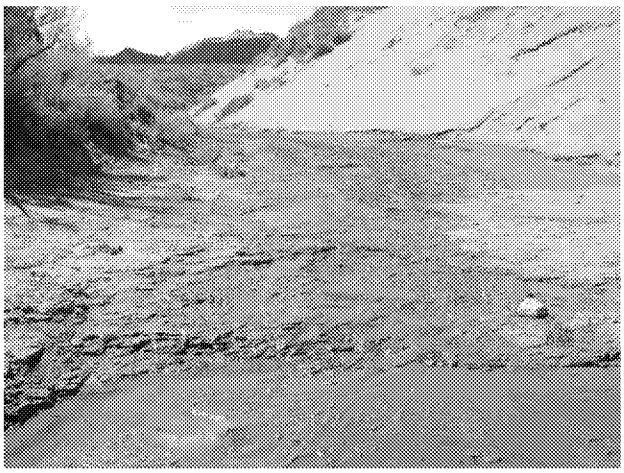


August 31, 2005

May 23, 2006

June 30, 2016

July 22, 2016



August 16, 2016

July 13, 2017

Table 4.2.1 – Gypsum Creek Site 29GYPSUMCR01 – Water Quality Data Assessment Table

Site 29GYPSUMCR01

Site	Alias	Location
29GYPSUMCR01	29-01	Gypsum Creek @ Sand Spring

Total		Assessment period	
Year(s) sampled	# of Sample Events	Year(s) sampled*	# of Sample Events*
1999-2017	12	2016-2017	5

*Note that not all analytes were necessarily sampled each sample event.

	All samples		Assessment period	
Designated Use	Total number of exceedances	Total analytes exceeded	Total number of exceedances	Total analytes exceeded
FC	0	0	0	0
PrHC	0	0	0	0
ScHC	0	0	0	0
A&WHbt (A)	3	1	1	1
A&WHbt (C)	12	1	5	1
AgWS	12	1	5	1
LW	0	0	0	0

	Domestic Water Supply*					
	All samples			Assessment period		
Analyte	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	1	10	10.0%	1	5	20.0%
Barium (T)	0	10	0.0%	0	5	0.0%
Beryllium (T)	0	10	0.0%	0	5	0.0%
Boron (T)	0	10	0.0%	0	5	0.0%
Chromium (T)	0	10	0.0%	0	5	0.0%
Gross alpha (Adj)	0	9	0.0%	0	5	0.0%
Lead (T)	0	10	0.0%	0	5	0.0%
Manganese (T)	0	5	0.0%	0	5	0.0%
Radium-226/228 (T)	0	3	0.0%	0	1	0.0%
Thallium (T)	0	10	0.0%	0	5	0.0%

*Not a designated use for this water body, but results are provided for reference.

Table 4.2.1 – Gypsum Creek Site 29GYPSUMCR01 – Water Quality Data Assessment Table (continued)

Analyte	Fish Consumption					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Mercury (T)	0	12	0.0%	0	5	0.0%
Thallium (T)	0	10	0.0%	0	5	0.0%

Analyte	Primary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	0	10	0.0%	0	5	0.0%
Lead (T)	0	10	0.0%	0	5	0.0%

Analyte	Secondary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Lead (T)	0	10	0.0%	0	5	0.0%

Analyte	Aquatic and Wildlife Habitat (Acute)					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Selenium (T)	3	12	25.0%	1	5	20.0%

Analyte	Aquatic and Wildlife Habitat (Chronic)					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (AS)	0	5	0.0%	0	5	0.0%
Mercury (T)	0	12	0.0%	0	5	0.0%
Selenium (T)	12	12	100.0%	5	5	100.0%

Analyte	Agricultural Water Supply					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (T)	0	9	0.0%	0	5	0.0%
Molybdenum (T)	0	8	0.0%	0	5	0.0%
Radium-226/228 (T)	0	3	0.0%	0	1	0.0%
Selenium (T)	12	12	100.0%	5	5	100.0%

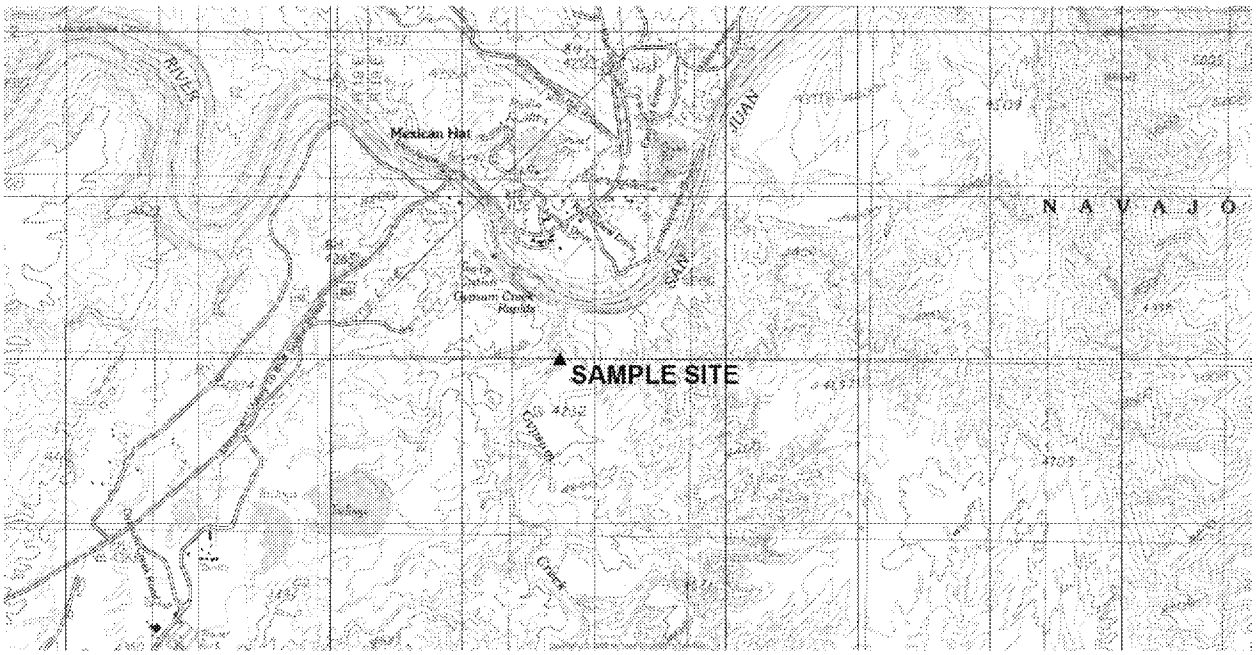
Table 4.2.1 – Gypsum Creek Site 29GYPSUMCR01- Water Quality Data Assessment Table (continued)

Analyte	Livestock Watering					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Gross alpha (Adj)	0	9	0.0%	0	5	0.0%
Lead (T)	0	10	0.0%	0	5	0.0%
Radium-226/228 (T)	0	3	0.0%	0	1	0.0%
Vanadium (T)	0	5	0.0%	0	5	0.0%

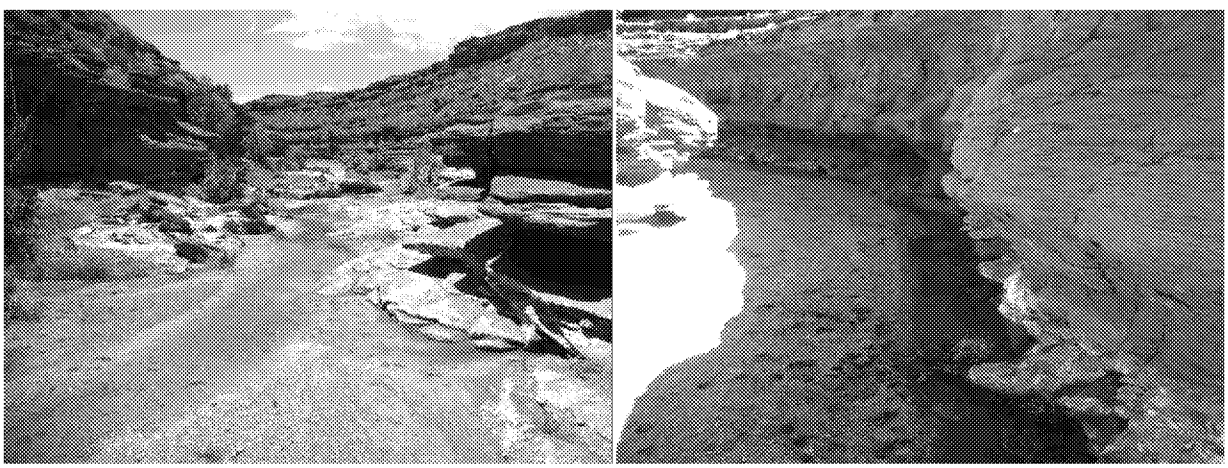
4.2.1 Gypsum Creek Site 29GYPSUMCR01 -Designated Use Support and Impairment Determination

- **Was the minimum number of samples to determine designated use support obtained during the assessment period? Yes.**
- **Category of Designated Use Support: Category 5b – At least one designated use is not supported and a review of the designated use and/or water quality standards will be conducted to determine if appropriate for the surface water body.**
- **Category 5b is specific to only the analytes listed above with 2 or more exceedances during the assessment period for the individual designated use. For analytes with 1 or less exceedances during the assessment period the designated use is supported for those analytes.**
- **The Agricultural Water Supply and Livestock Watering numeric surface water quality standards are being reviewed to determine toxicity to agricultural products, livestock, and human health.**

Map 4.2.2 – Gypsum Creek Sample Site 29GYPSUMCR08



Photographs 4.2.2 – Gypsum Creek Sample Site 29GYPSUMCR08



June 23, 2016 **July 7, 2016**

Photographs 4.2.2 – Gypsum Creek Sample Site 29GYPSUMCR08 (continued)

August 17, 2016

August 17, 2016

September 7, 2016

July 18, 2017

Table 4.2.2 – Gypsum Creek Site 29GYPSUMCR08– Water Quality Data Assessment Table

Site 29GYPSUMCR08

Site	Alias	Location
29GYPSUMCR08	29-08	Gypsum Creek near mouth

Total		Assessment period	
Year(s) sampled	# of Sample Events	Year(s) sampled*	# of Sample Events*
2016-2017	5	2016-2017	5

*Note that not all analytes were necessarily sampled each sample event.

Table 4.2.2 – Gypsum Creek Site 29GYPSUMCR08– Water Quality Data Assessment Table (continued)

Designated Use	All samples		Assessment period	
	Total number of exceedances	Total analytes exceeded	Total number of exceedances	Total analytes exceeded
FC	0	0	0	0
PrHC	1	1	1	1
ScHC	1	1	1	1
A&WHbt (A)	4	1	4	1
A&WHbt (C)	5	1	5	1
AgWS	9	3	9	3
LW	4	2	4	2

Analyte	Domestic Water Supply*					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	1	5	20.0%	1	5	20.0%
Barium (T)	0	5	0.0%	0	5	0.0%
Beryllium (T)	1	5	20.0%	1	5	20.0%
Boron (T)	4	5	80.0%	4	5	80.0%
Chromium (T)	1	5	20.0%	1	5	20.0%
Gross alpha (Adj)	3	5	60.0%	3	5	60.0%
Lead (T)	1	5	20.0%	1	5	20.0%
Manganese (T)	1	5	20.0%	1	5	20.0%
Radium-226/228 (T)	0	0	--	0	0	--
Thallium (T)	0	5	0.0%	0	5	0.0%

*Not a designated use for this water body, but results are provided for reference.

Analyte	Fish Consumption					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Mercury (T)	0	5	0.0%	0	5	0.0%
Thallium (T)	0	5	0.0%	0	5	0.0%

Analyte	Primary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	0	5	0.0%	0	5	0.0%
Lead (T)	1	5	20.0%	1	5	20.0%

Table 4.2.2 – Gypsum Creek Site 29GYPSUMCR08– Water Quality Data Assessment Table (continued)

Analyte	Secondary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Lead (T)	1	5	20.0%	1	5	20.0%

Analyte	Aquatic and Wildlife Habitat (Acute)					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Selenium (T)	4	5	80.0%	4	5	80.0%

Analyte	Aquatic and Wildlife Habitat (Chronic)					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (AS)	0	5	0.0%	0	5	0.0%
Mercury (T)	0	5	0.0%	0	5	0.0%
Selenium (T)	5	5	100.0%	5	5	100.0%

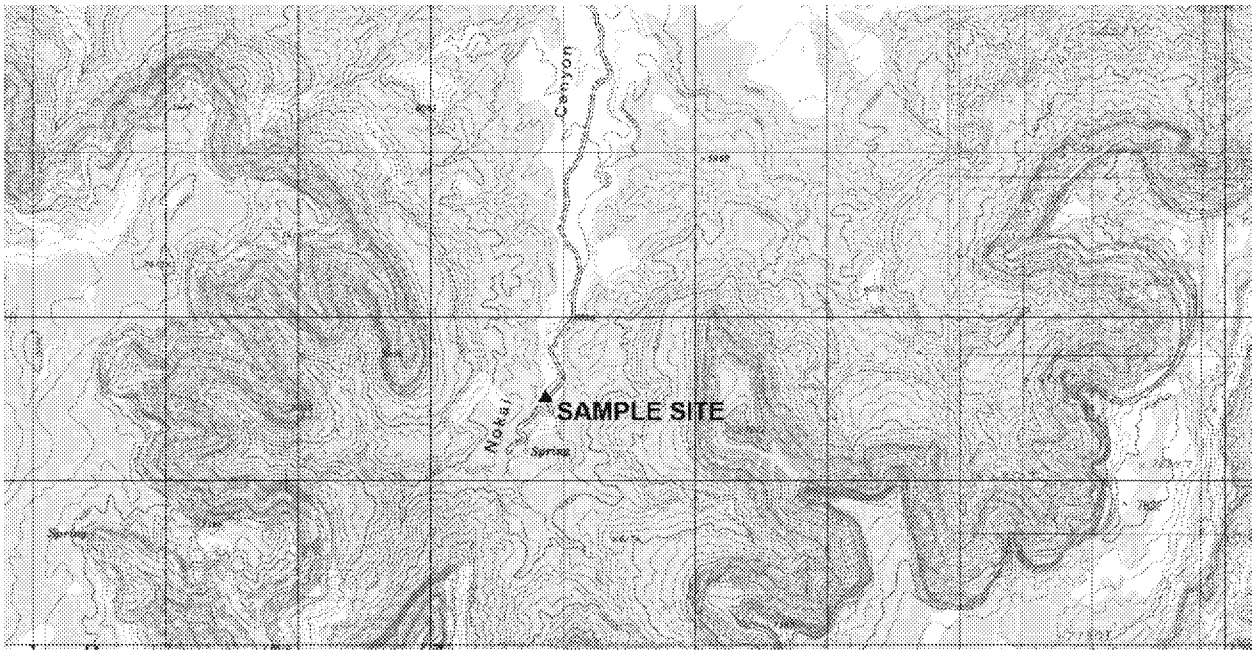
Analyte	Agricultural Water Supply					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (T)	1	5	20.0%	1	5	20.0%
Molybdenum (T)	4	5	80.0%	4	5	80.0%
Radium-226/228 (T)	0	0	--	0	0	--
Selenium (T)	4	5	80.0%	4	5	80.0%

Analyte	Livestock Watering					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Gross alpha (Adj)	3	5	60.0%	3	5	60.0%
Lead (T)	0	5	0.0%	0	5	0.0%
Radium-226/228 (T)	0	0	--	0	0	--
Vanadium (T)	1	5	20.0%	1	5	20.0%

4.2.2 Gypsum Creek Site 29GYPSUMCR08 - Designated Use Support and Impairment Determination

- **Was the minimum number of samples to determine designated use support obtained during the assessment period? Yes.**
- **Category of Designated Use Support: Category 5b – At least one designated use is not supported and a review of the designated use and/or water quality standards will be conducted to determine if appropriate for the surface water body.**
- **Category 5b is specific to only the analytes listed above with 2 or more exceedances during the assessment period for the individual designated use. For analytes with 1 or less exceedances during the assessment period the designated use is supported for those analytes.**
- **The Agricultural Water Supply and Livestock Watering numeric surface** water **quality standards are being reviewed to determine toxicity to agricultural products, livestock, and human health.**

Map 4.3 – Nokai Canyon Sample Site 29NOKAICAN02



Photographs 4.3 – Nokai Canyon Sample Site 29NOKAICAN02

September 2, 2004

April 21, 2005

Table 4.3 – Nokai Canyon – Water Quality Data Assessment Table

Site 29NOKAICAN02

Site	Alias	Location
29NOKAICAN02	29-02	Nokai Canyon

Total		Assessment period	
Year(s) sampled	# of Sample Events	Year(s) sampled*	# of Sample Events*
2004-2006	3	2004-2006	3

*Note that not all analytes were necessarily sampled each sample event.

	All samples		Assessment period	
Designated Use	Total number of exceedances	Total analytes exceeded	Total number of exceedances	Total analytes exceeded
FC	0	0	0	0
PrHC	0	0	0	0
ScHC	0	0	0	0
A&WHbt (A)	0	0	0	0
A&WHbt (C)	0	0	0	0
AgWS	0	0	0	0
LW	0	0	0	0

Table 4.3 – Nokai Canyon – Water Quality Data Assessment Table (continued)

Analyte	Domestic Water Supply*					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	0	3	0.0%	0	3	0.0%
Barium (T)	0	3	0.0%	0	3	0.0%
Beryllium (T)	0	3	0.0%	0	3	0.0%
Boron (T)	0	3	0.0%	0	3	0.0%
Chromium (T)	0	3	0.0%	0	3	0.0%
Gross alpha (Adj)	0	2	0.0%	0	2	0.0%
Lead (T)	0	3	0.0%	0	3	0.0%
Manganese (T)	0	0	--	0	0	--
Radium-226/228 (T)	0	0	--	0	0	--
Thallium (T)	0	3	0.0%	0	3	0.0%

*Not a designated use for this water body, but results are provided for reference.

Analyte	Fish Consumption					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Mercury (T)	0	3	0.0%	0	3	0.0%
Thallium (T)	0	3	0.0%	0	3	0.0%

Analyte	Primary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	0	3	0.0%	0	3	0.0%
Lead (T)	0	3	0.0%	0	3	0.0%

Analyte	Secondary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Lead (T)	0	3	0.0%	0	3	0.0%

Analyte	Aquatic and Wildlife Habitat (Acute)					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Selenium (T)	0	3	0.0%	0	3	0.0%

Table 4.3 – Nokai Canyon – Water Quality Data Assessment Table (continued

Analyte	Aquatic and Wildlife Habitat (Chronic)					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (AS)	0	0	--	0	0	--
Mercury (T)	0	3	0.0%	0	3	0.0%
Selenium (T)	0	3	0.0%	0	3	0.0%

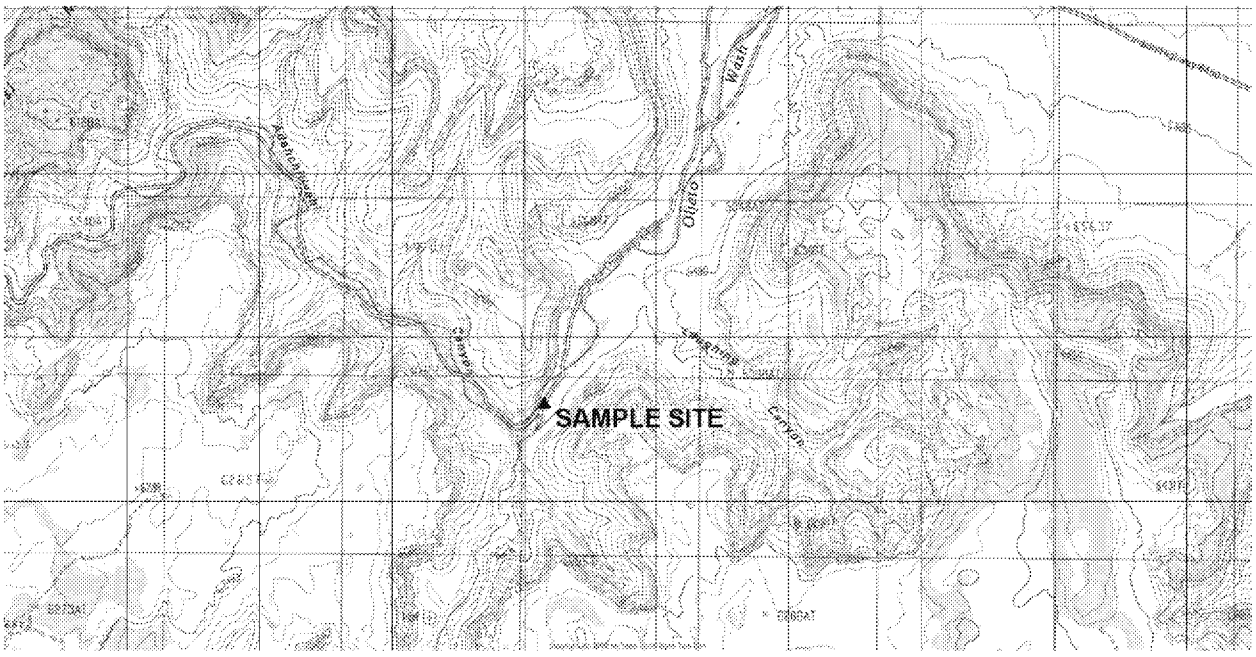
Analyte	Agricultural Water Supply					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (T)	0	2	0.0%	0	2	0.0%
Molybdenum (T)	0	3	0.0%	0	3	0.0%
Radium-226/228 (T)	0	0	--	0	0	--
Selenium (T)	0	3	0.0%	0	3	0.0%

Analyte	Livestock Watering					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Gross alpha (Adj)	0	2	0.0%	0	2	0.0%
Lead (T)	0	3	0.0%	0	3	0.0%
Radium-226/228 (T)	0	0	--	0	0	--
Vanadium (T)	0	0	--	0	0	--

4.3 Nokai Canyon - Designated Use Support and Impairment Determination

- **Was the minimum number of samples to determine designated use support obtained during the assessment period? No.**
- **Category of Designated Use Support: Category 3 - There is insufficient data to determine if any designated use is supported.**

Map 4.4.1 – Oljeto Wash Sample Site 29OLJETOWA03

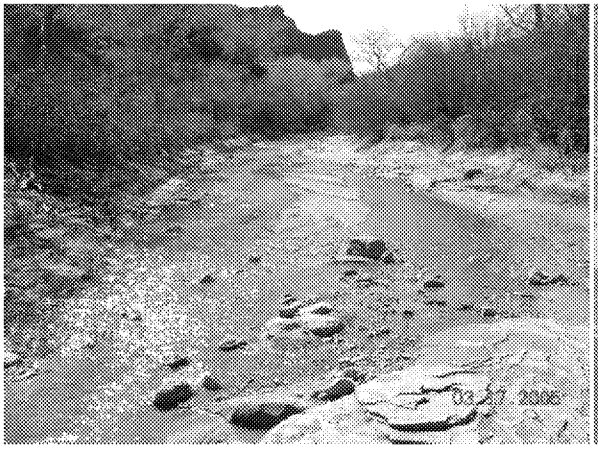


Photographs 4.4.1 – Oljeto Wash Sample Site 29OLJETOWA03

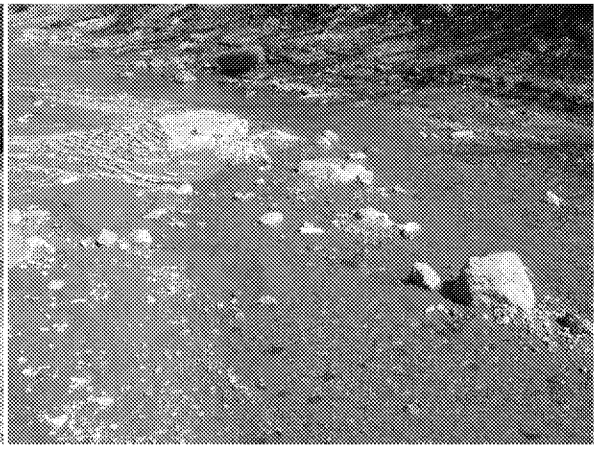
September 1, 2004

June 14, 2006

Photographs 4.4.1 – Oljeto Wash Sample Site 29OLJETOWA03 (continued)



March 17, 2005



March 17, 2005

Table 4.4.1 – Oljeto Wash Site 29OLJETOWA03– Water Quality Data Assessment Table

Site 29OLJETOWA03

Site	Alias	Location
29OLJETOWA03	29-03	Oljeto Wash @ Adahchijiyahi Canyon

Total		Assessment period	
Year(s) sampled	# of Sample Events	Year(s) sampled*	# of Sample Events*
2004-2006	3	2004-2006	3

*Note that not all analytes were necessarily sampled each sample event.

	All samples		Assessment period	
Designated Use	Total number of exceedances	Total analytes exceeded	Total number of exceedances	Total analytes exceeded
FC	0	0	0	0
PrHC	0	0	0	0
ScHC	0	0	0	0
A&WHbt (A)	0	0	0	0
A&WHbt (C)	0	0	0	0
AgWS	0	0	0	0
LW	0	0	0	0

Table 4.4.1 – Oljeto Wash Site 29OLJETOWA03– Water Quality Data Assessment Table (continued)

Analyte	Domestic Water Supply*					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	0	3	0.0%	0	3	0.0%
Barium (T)	0	3	0.0%	0	3	0.0%
Beryllium (T)	0	3	0.0%	0	3	0.0%
Boron (T)	0	3	0.0%	0	3	0.0%
Chromium (T)	0	3	0.0%	0	3	0.0%
Gross alpha (Adj)	0	2	0.0%	0	2	0.0%
Lead (T)	0	3	0.0%	0	3	0.0%
Manganese (T)	0	0	--	0	0	--
Radium-226/228 (T)	0	0	--	0	0	--
Thallium (T)	0	3	0.0%	0	3	0.0%

*Not a designated use for this water body, but results are provided for reference.

Analyte	Fish Consumption					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Mercury (T)	0	3	0.0%	0	3	0.0%
Thallium (T)	0	3	0.0%	0	3	0.0%

Analyte	Primary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	0	3	0.0%	0	3	0.0%
Lead (T)	0	3	0.0%	0	3	0.0%

Analyte	Secondary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Lead (T)	0	3	0.0%	0	3	0.0%

Table 4.4.1 – Oljeto Wash Site 29OLJETOWA03– Water Quality Data Assessment Table (continued)

	Aquatic and Wildlife Habitat (Acute)					
	All samples			Assessment period		
Analyte	Exceedances	n	Percent	Exceedances	n	Percent
Selenium (T)	0	3	0.0%	0	3	0.0%

	Aquatic and Wildlife Habitat (Chronic)					
	All samples			Assessment period		
Analyte	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (AS)	0	0	--	0	0	--
Mercury (T)	0	3	0.0%	0	3	0.0%
Selenium (T)	0	3	0.0%	0	3	0.0%

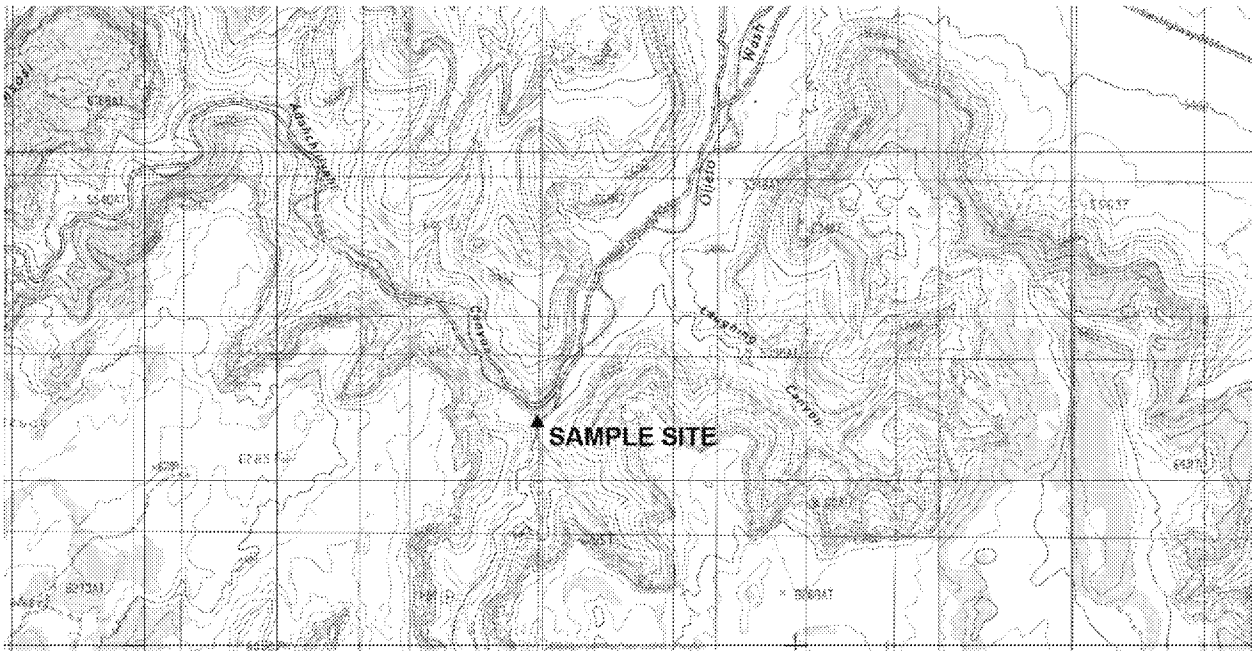
	Agricultural Water Supply					
	All samples			Assessment period		
Analyte	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (T)	0	2	0.0%	0	2	0.0%
Molybdenum (T)	0	3	0.0%	0	3	0.0%
Radium-226/228 (T)	0	0	--	0	0	--
Selenium (T)	0	3	0.0%	0	3	0.0%

	Livestock Watering					
	All samples			Assessment period		
Analyte	Exceedances	n	Percent	Exceedances	n	Percent
Gross alpha (Adj)	0	2	0.0%	0	2	0.0%
Lead (T)	0	3	0.0%	0	3	0.0%
Radium-226/228 (T)	0	0	--	0	0	--
Vanadium (T)	0	0	--	0	0	--

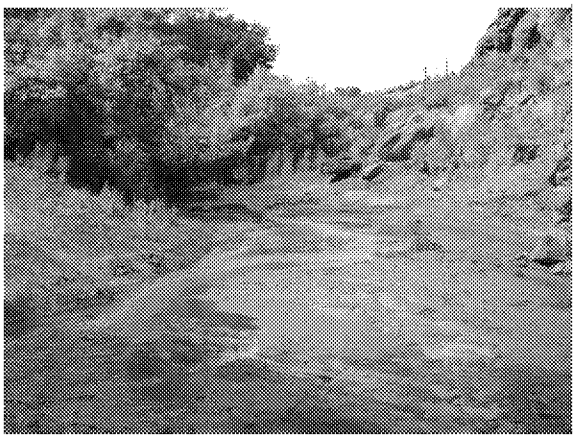
4.4.1 Oljeto Wash Site 29OLJETOWA03 - Designated Use Support and Impairment Determination

- **Was the minimum number of samples to determine designated use support obtained during the assessment period? No.**
- **Category of Designated Use Support: Category 3 - There is insufficient data to determine if any designated use is supported.**

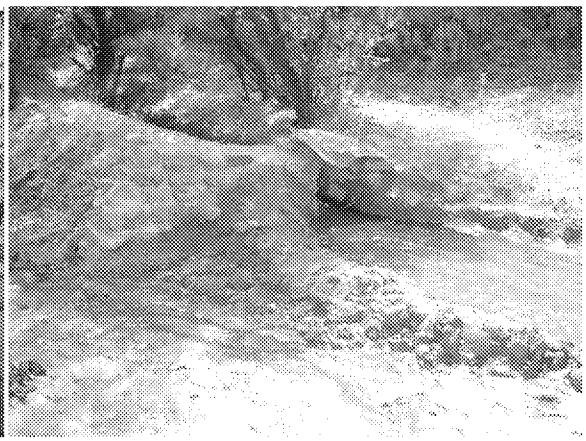
Map 4.4.2 – Oljeto Wash Sample Site 29OLJETOWA09



Photographs 4.4.2 – Oljeto Wash Sample Site 29OLJETOWA09

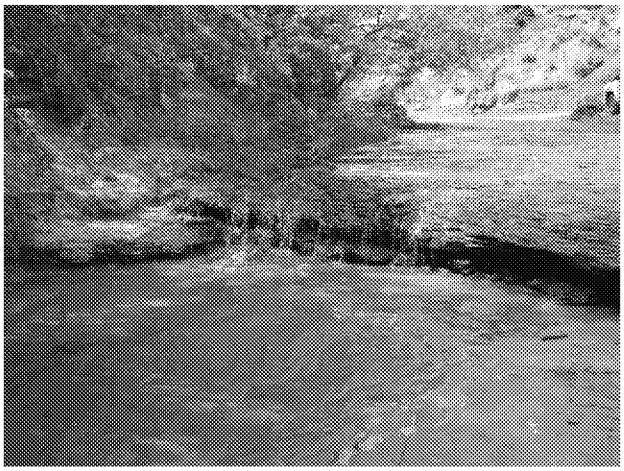


June 28, 2016

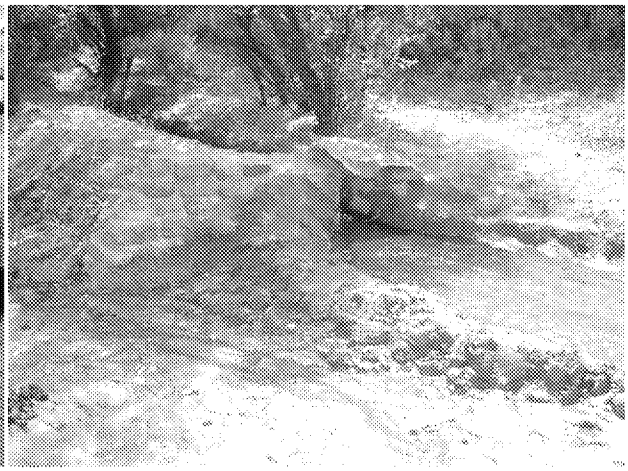


Agricultural Canal Diversion June 28, 2016

Photographs 4.4.2 – Oljeto Wash Sample Site 29OLJETOWA09 (continued)

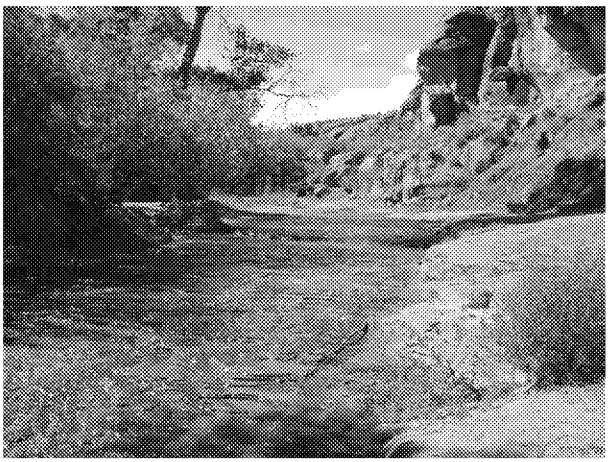


July 26, 2016

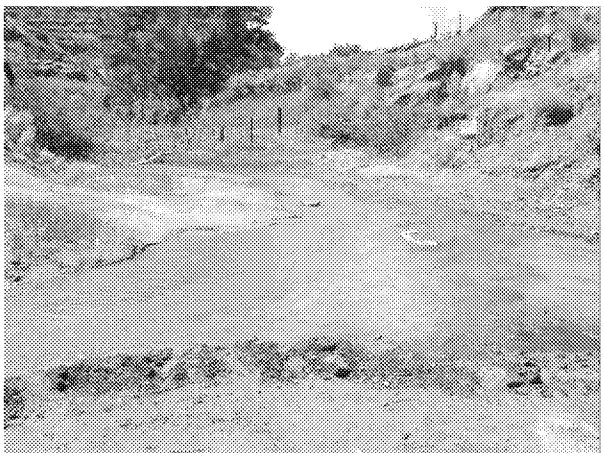


Agricultural Canal Diversion June 28, 2016

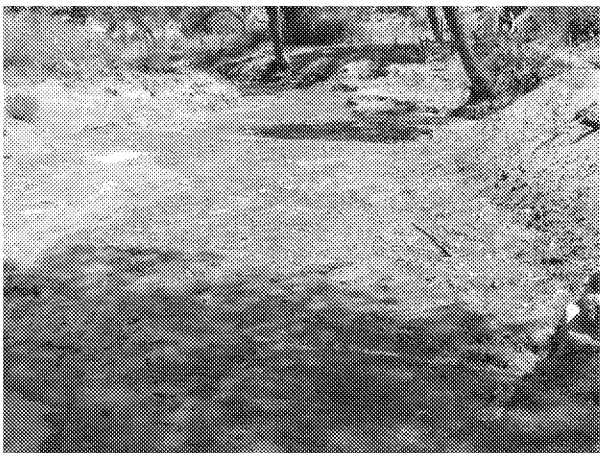
August 30, 2016



September 16, 2016



July 12, 2017



July 12, 2017

Table 4.4.2 – Oljeto Wash Site 29OLJETOWA09 – Water Quality Data Assessment Table

Site 29OLJETOWA09

Site	Alias	Location
29OLJETOWA09	29-09	Oljeto Wash in headwaters of Tseyi-hatsosi

Total		Assessment period	
Year(s) sampled	# of Sample Events	Year(s) sampled*	# of Sample Events*
2016-2017	5	2016-2017	5

*Note that not all analytes were necessarily sampled each sample event.

	All samples		Assessment period	
Designated Use	Total number of exceedances	Total analytes exceeded	Total number of exceedances	Total analytes exceeded
FC	0	0	0	0
PrHC	0	0	0	0
ScHC	0	0	0	0
A&WHbt (A)	0	0	0	0
A&WHbt (C)	0	0	0	0
AgWS	0	0	0	0
LW	0	0	0	0

	Domestic Water Supply*					
	All samples			Assessment period		
Analyte	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	0	5	0.0%	0	5	0.0%
Barium (T)	0	5	0.0%	0	5	0.0%
Beryllium (T)	0	5	0.0%	0	5	0.0%
Boron (T)	0	5	0.0%	0	5	0.0%
Chromium (T)	0	5	0.0%	0	5	0.0%
Gross alpha (Adj)	0	5	0.0%	0	5	0.0%
Lead (T)	0	5	0.0%	0	5	0.0%
Manganese (T)	0	5	0.0%	0	5	0.0%
Radium-226/228 (T)	0	1	0.0%	0	1	0.0%
Thallium (T)	0	5	0.0%	0	5	0.0%

*Not a designated use for this water body, but results are provided for reference.

Table 4.4.2 – Oljeto Wash Site 29OLJETOWA09 – Water Quality Data Assessment Table (continued)

	Fish Consumption					
	All samples			Assessment period		
Analyte	Exceedances	n	Percent	Exceedances	n	Percent
Mercury (T)	0	5	0.0%	0	5	0.0%
Thallium (T)	0	5	0.0%	0	5	0.0%

	Primary Human Contact					
	All samples			Assessment period		
Analyte	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	0	5	0.0%	0	5	0.0%
Lead (T)	0	5	0.0%	0	5	0.0%

	Secondary Human Contact					
	All samples			Assessment period		
Analyte	Exceedances	n	Percent	Exceedances	n	Percent
Lead (T)	0	5	0.0%	0	5	0.0%

	Aquatic and Wildlife Habitat (Acute)					
	All samples			Assessment period		
Analyte	Exceedances	n	Percent	Exceedances	n	Percent
Selenium (T)	0	5	0.0%	0	5	0.0%

	Aquatic and Wildlife Habitat (Chronic)					
	All samples			Assessment period		
Analyte	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (AS)	0	5	0.0%	0	5	0.0%
Mercury (T)	0	5	0.0%	0	5	0.0%
Selenium (T)	0	5	0.0%	0	5	0.0%

	Agricultural Water Supply					
	All samples			Assessment period		
Analyte	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (T)	0	5	0.0%	0	5	0.0%
Molybdenum (T)	0	5	0.0%	0	5	0.0%
Radium-226/228 (T)	0	1	0.0%	0	1	0.0%
Selenium (T)	0	5	0.0%	0	5	0.0%

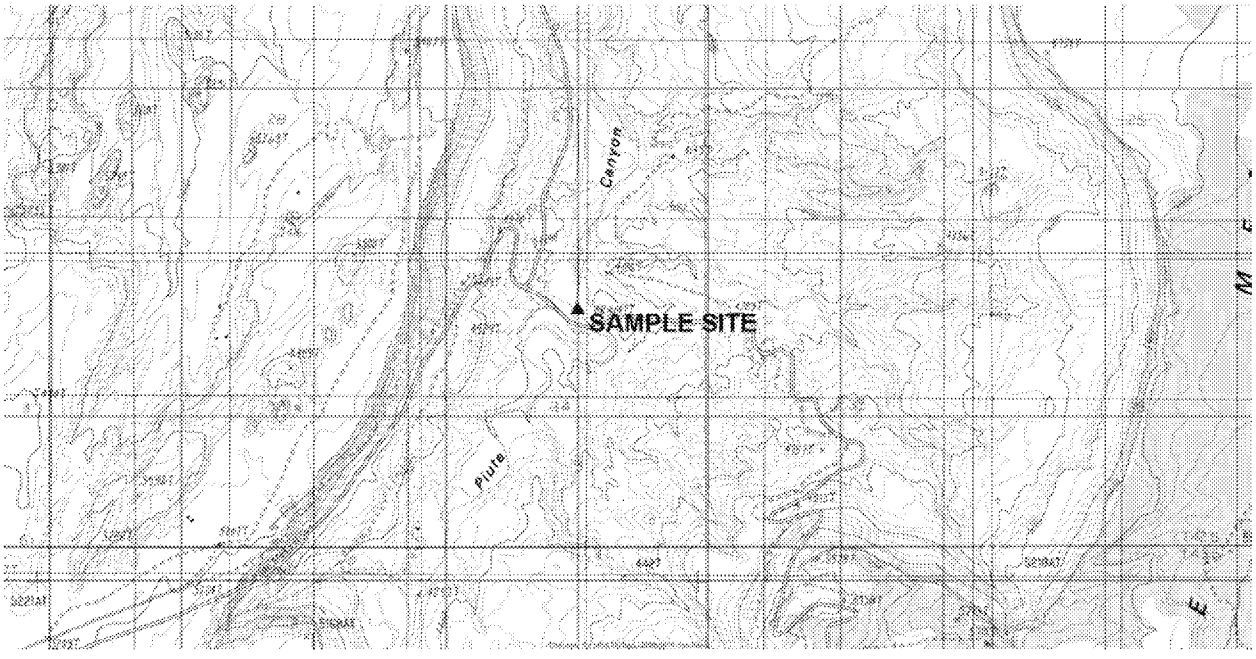
Table 4.4.2 – Oljeto Wash Site 29OLJETOWA09 – Water Quality Data Assessment Table (continued)

Analyte	Livestock Watering					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Gross alpha (Adj)	0	5	0.0%	0	5	0.0%
Lead (T)	0	5	0.0%	0	5	0.0%
Radium-226/228 (T)	0	1	0.0%	0	1	0.0%
Vanadium (T)	0	5	0.0%	0	5	0.0%

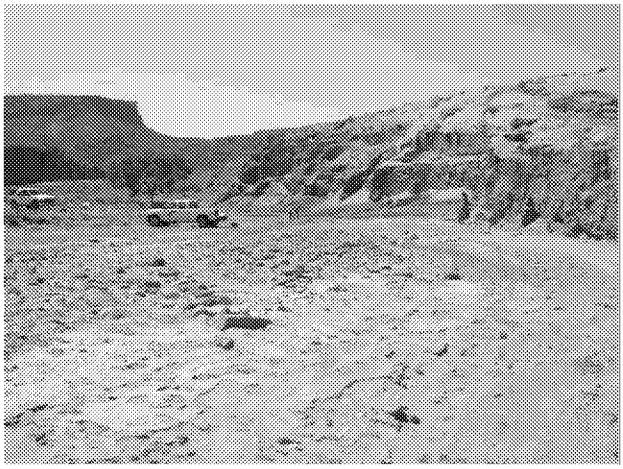
4.4.2 Oljeto Wash Site 29OLJETOWA00 - Designated Use Support and Impairment Determination

- **Was the minimum number of samples to determine designated use support obtained during the assessment period? Yes.**
- **Category of Designated Use Support: Category 1 – All designated uses are supported**

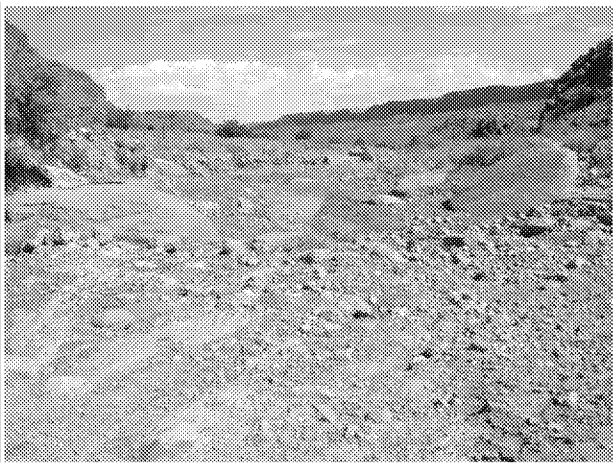
Map 4.5.1 – Piute Canyon Sample Site 29PIUTECAN04



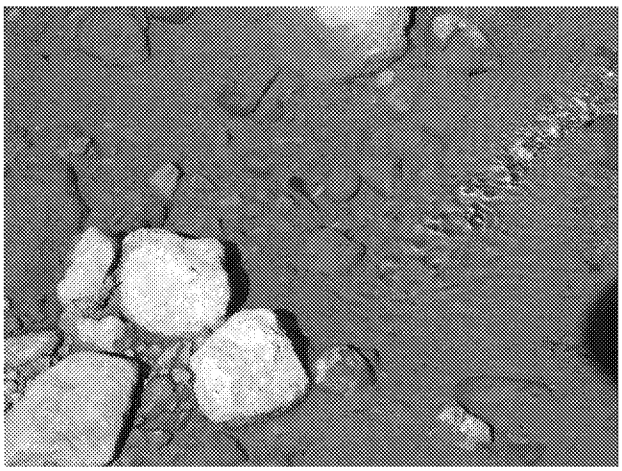
Photographs 4.5.1 – Piute Canyon Sample Site 29PIUTECAN04



April 27, 2004

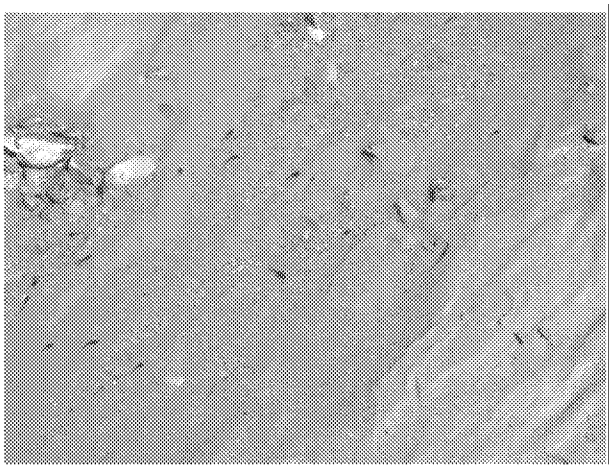


September 1, 2005

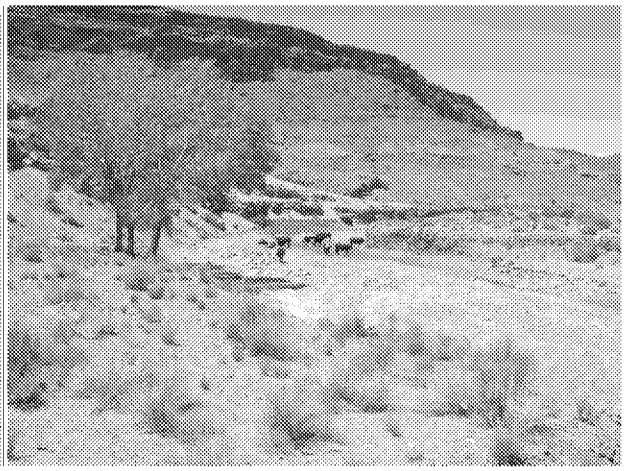


Tadpole on September 1, 2005

July 20, 2006

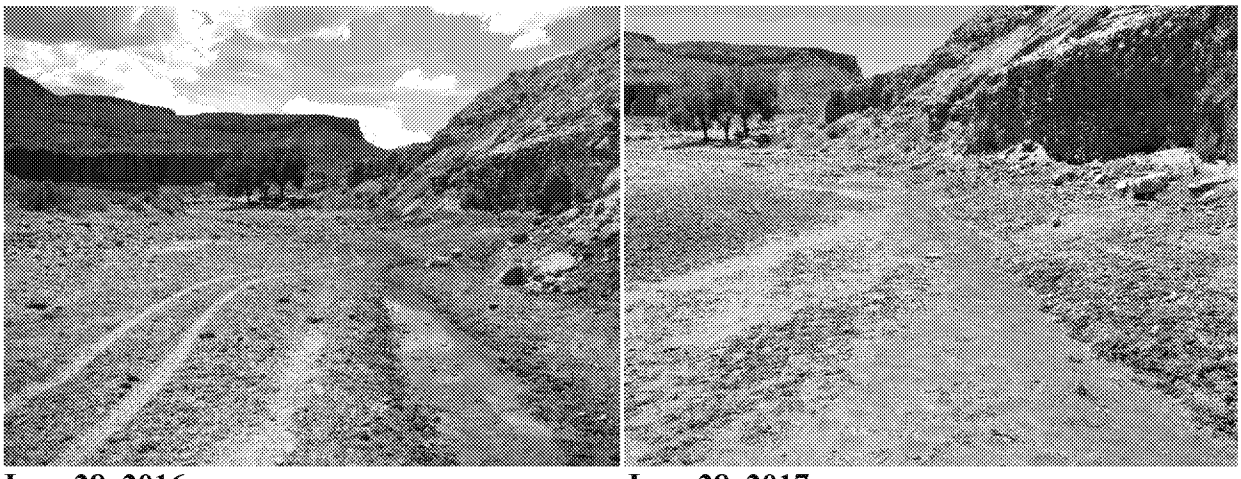


Tadpoles on July 20, 2006



Livestock on June 17, 2008

Photographs 4.5.1 – Piute Canyon Sample Site 29PIUTECAN04 (continued)



June 28, 2016 **June 28, 2017**

Table 4.5.1 – Piute Canyon Site 29PIUTECAN04 – Water Quality Data Assessment Table

Site 29PIUTECAN04

Site	Alias	Location
29PIUTECAN04	29-04	Piute Canyon @ CR 434

Total		Assessment period	
Year(s) sampled	# of Sample Events	Year(s) sampled*	# of Sample Events*
2004-2017	6	2016-2017	5

*Note that not all analytes were necessarily sampled each sample event.

	All samples		Assessment period	
Designated Use	Total number of exceedances	Total analytes exceeded	Total number of exceedances	Total analytes exceeded
FC	0	0	0	0
PrHC	0	0	0	0
ScHC	0	0	0	0
A&WHbt (A)	0	0	0	0
A&WHbt (C)	0	0	0	0
AgWS	0	0	0	0
LW	0	0	0	0

Table 4.5.1 – Piute Canyon Site 29PIUTECAN04 – Water Quality Data Assessment Table (continued)

Analyte	Domestic Water Supply*					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	0	6	0.0%	0	5	0.0%
Barium (T)	0	6	0.0%	0	5	0.0%
Beryllium (T)	0	6	0.0%	0	5	0.0%
Boron (T)	0	6	0.0%	0	5	0.0%
Chromium (T)	0	6	0.0%	0	5	0.0%
Gross alpha (Adj)	0	6	0.0%	0	5	0.0%
Lead (T)	0	6	0.0%	0	5	0.0%
Manganese (T)	0	5	0.0%	0	5	0.0%
Radium-226/228 (T)	0	1	0.0%	0	1	0.0%
Thallium (T)	0	6	0.0%	0	5	0.0%

*Not a designated use for this water body, but results are provided for reference.

Analyte	Fish Consumption					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Mercury (T)	0	6	0.0%	0	5	0.0%
Thallium (T)	0	6	0.0%	0	5	0.0%

Analyte	Primary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	0	6	0.0%	0	5	0.0%
Lead (T)	0	6	0.0%	0	5	0.0%

Analyte	Secondary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Lead (T)	0	6	0.0%	0	5	0.0%

Analyte	Aquatic and Wildlife Habitat (Acute)					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Selenium (T)	0	6	0.0%	0	5	0.0%

Table 4.5.1 – Piute Canyon Site 29PIUTECAN04 – Water Quality Data Assessment Table (continued)

Analyte	Aquatic and Wildlife Habitat (Chronic)					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (AS)	0	5	0.0%	0	5	0.0%
Mercury (T)	0	6	0.0%	0	5	0.0%
Selenium (T)	0	6	0.0%	0	5	0.0%

Analyte	Agricultural Water Supply					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (T)	0	6	0.0%	0	5	0.0%
Molybdenum (T)	0	6	0.0%	0	5	0.0%
Radium-226/228 (T)	0	1	0.0%	0	1	0.0%
Selenium (T)	0	6	0.0%	0	5	0.0%

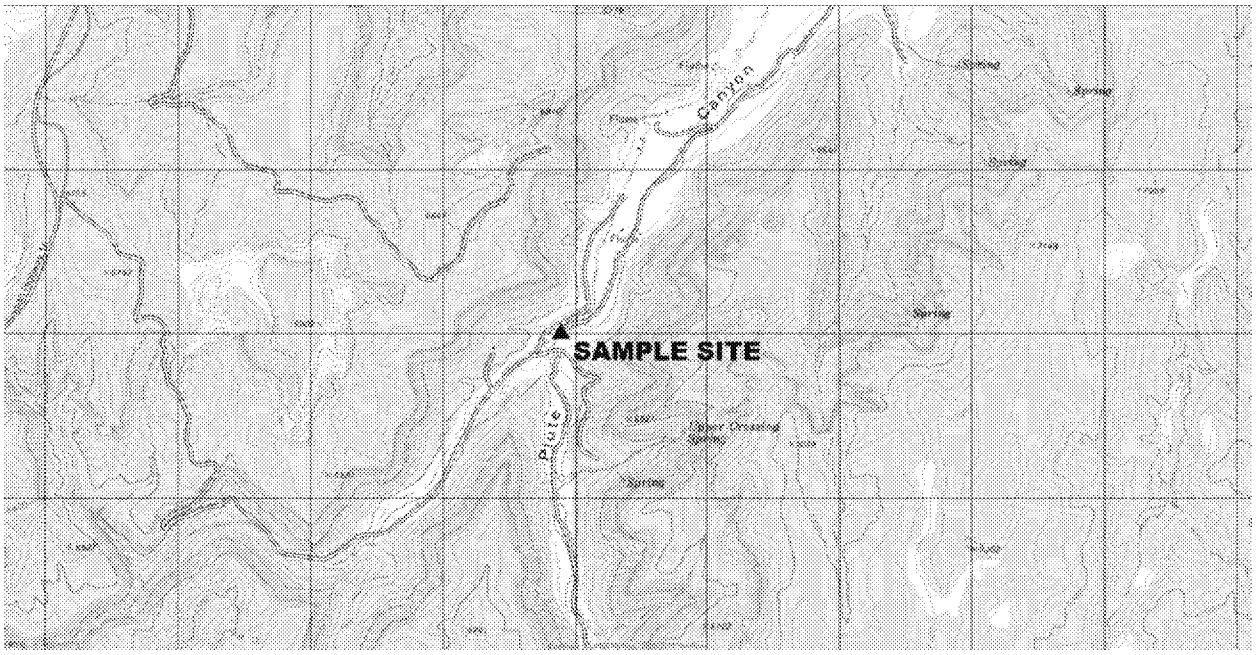
Analyte	Livestock Watering					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Gross alpha (Adj)	0	6	0.0%	0	5	0.0%
Lead (T)	0	6	0.0%	0	5	0.0%
Radium-226/228 (T)	0	1	0.0%	0	1	0.0%
Vanadium (T)	0	5	0.0%	0	5	0.0%

4.5.1 Piute Canyon Site 29PIUTECAN04 - Designated Use Support and Impairment Determination

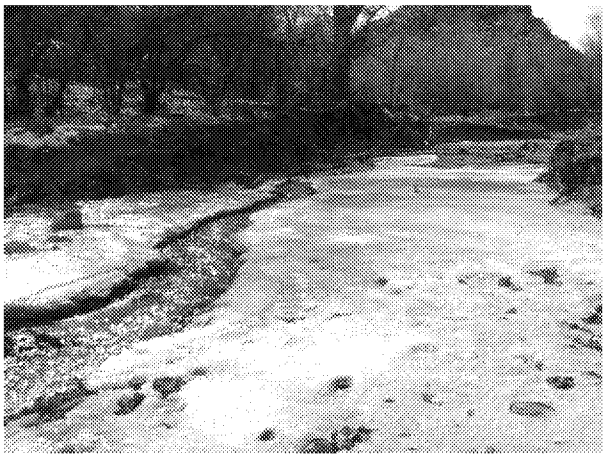
- **Was the minimum number of samples to determine designated use support obtained during the assessment period? Yes.**
- **Category of Designated Use Support: Category 1 – All designated uses are supported.**

Map 4.5.2 – Piute Canyon Sample Site 29PIUTECAN06

29PIUTECAN06



Photographs 4.5.2 – Piute Canyon Sample Site 29PIUTECAN06

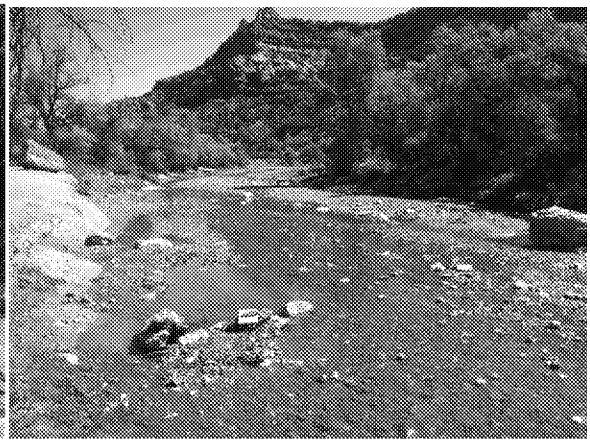


January 29, 2014

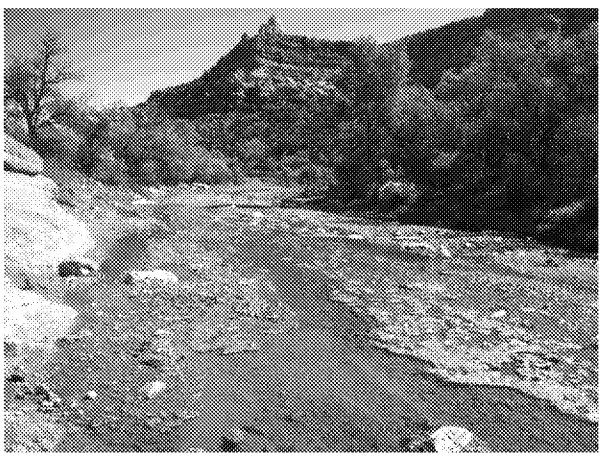
June 28, 2016

Photographs 4.5.2 – Piute Canyon Sample Site 29PIUTECAN06 (continued)

July 13, 2016



August 30, 2016



September 12, 2016

June 28, 2017

Table 4.5.2 – Piute Canyon Site 29PIUTECAN06 – Water Quality Data Assessment Table

Site 29PIUTECAN06

Site	Alias	Location
29PIUTECAN06	29-06	Piute Canyon in headwaters

Total		Assessment period	
Year(s) sampled	# of Sample Events	Year(s) sampled*	# of Sample Events*
2016-2017	5	2016-2017	5

*Note that not all analytes were necessarily sampled each sample event.

Table 4.5.2 – Piute Canyon Site 29PIUTECAN06 – Water Quality Data Assessment Table (continued)

Designated Use	All samples		Assessment period	
	Total number of exceedances	Total analytes exceeded	Total number of exceedances	Total analytes exceeded
FC	0	0	0	0
PrHC	0	0	0	0
ScHC	0	0	0	0
A&WHbt (A)	0	0	0	0
A&WHbt (C)	0	0	0	0
AgWS	0	0	0	0
LW	0	0	0	0

Analyte	Domestic Water Supply*					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	0	5	0.0%	0	5	0.0%
Barium (T)	0	5	0.0%	0	5	0.0%
Beryllium (T)	0	5	0.0%	0	5	0.0%
Boron (T)	0	5	0.0%	0	5	0.0%
Chromium (T)	0	5	0.0%	0	5	0.0%
Gross alpha (Adj)	0	5	0.0%	0	5	0.0%
Lead (T)	0	5	0.0%	0	5	0.0%
Manganese (T)	0	5	0.0%	0	5	0.0%
Radium-226/228 (T)	0	1	0.0%	0	1	0.0%
Thallium (T)	0	5	0.0%	0	5	0.0%

*Not a designated use for this water body, but results are provided for reference.

Analyte	Fish Consumption					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Mercury (T)	0	5	0.0%	0	5	0.0%
Thallium (T)	0	5	0.0%	0	5	0.0%

Table 4.5.2 – Piute Canyon Site 29PIUTECAN06 – Water Quality Data Assessment Table (continued)

Analyte	Primary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	0	5	0.0%	0	5	0.0%
Lead (T)	0	5	0.0%	0	5	0.0%

Analyte	Secondary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Lead (T)	0	5	0.0%	0	5	0.0%

Analyte	Aquatic and Wildlife Habitat (Acute)					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Selenium (T)	0	5	0.0%	0	5	0.0%

Analyte	Aquatic and Wildlife Habitat (Chronic)					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (AS)	0	5	0.0%	0	5	0.0%
Mercury (T)	0	5	0.0%	0	5	0.0%
Selenium (T)	0	5	0.0%	0	5	0.0%

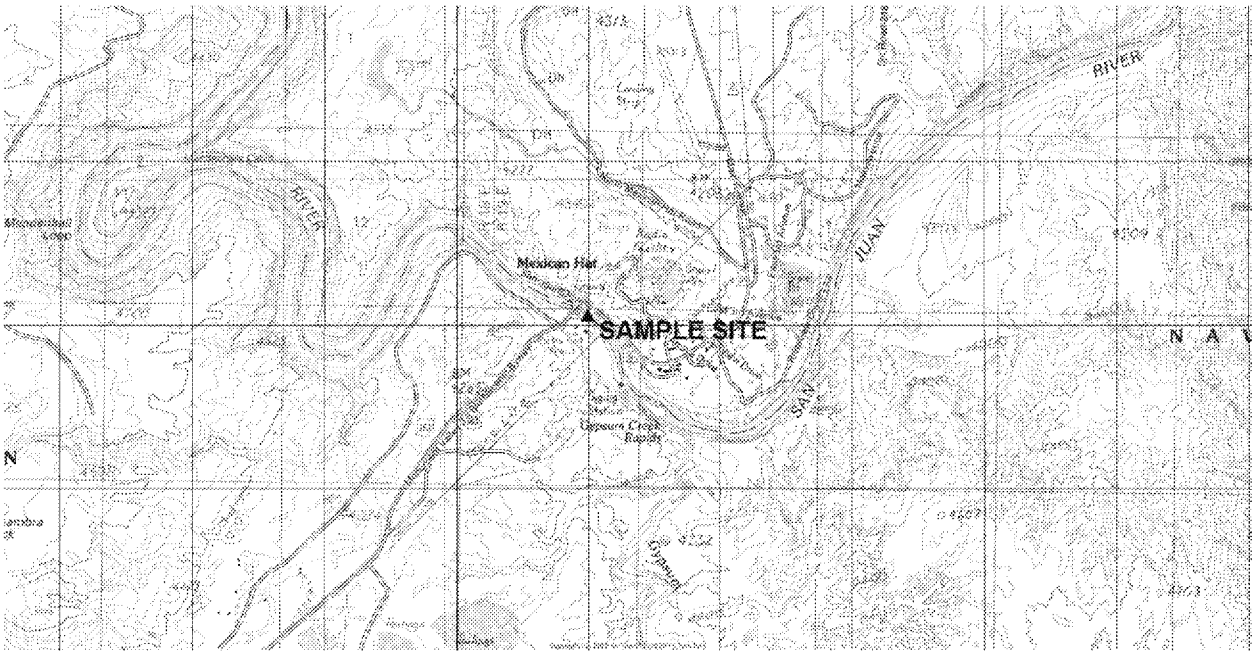
Analyte	Agricultural Water Supply					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (T)	0	5	0.0%	0	5	0.0%
Molybdenum (T)	0	5	0.0%	0	5	0.0%
Radium-226/228 (T)	0	1	0.0%	0	1	0.0%
Selenium (T)	0	5	0.0%	0	5	0.0%

Analyte	Livestock Watering					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Gross alpha (Adj)	0	5	0.0%	0	5	0.0%
Lead (T)	0	5	0.0%	0	5	0.0%
Radium-226/228 (T)	0	1	0.0%	0	1	0.0%
Vanadium (T)	0	5	0.0%	0	5	0.0%

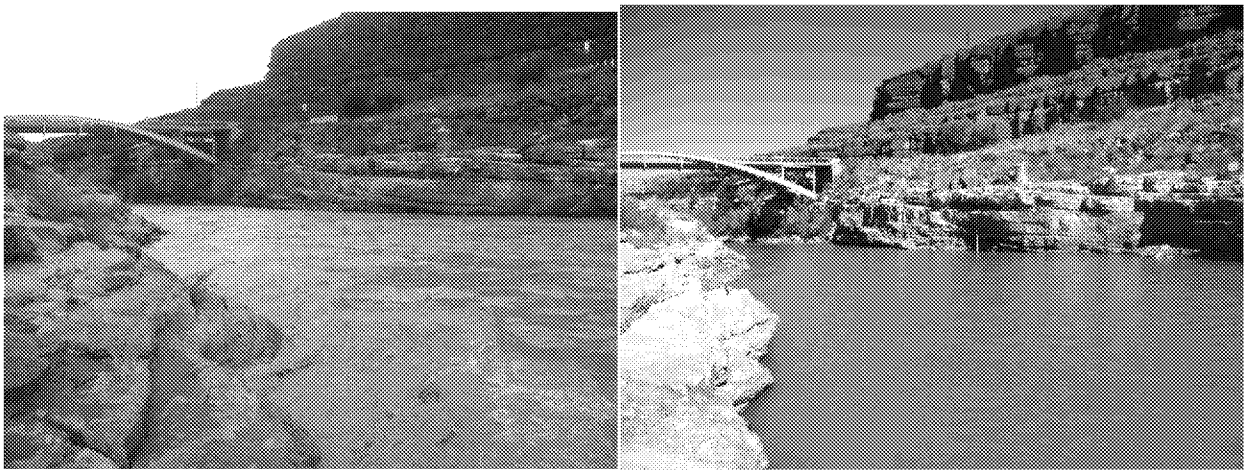
4.5.2 Piute Canyon Site 29PIUTECAN06 - Designated Use Support and Impairment Determination

- **Was the minimum number of samples to determine designated use support obtained during the assessment period? Yes.**
- **Category of Designated Use Support: Category 1 – All designated uses are supported.**

Map 4.6 – San Juan River Sample Site 29SANJUANR05

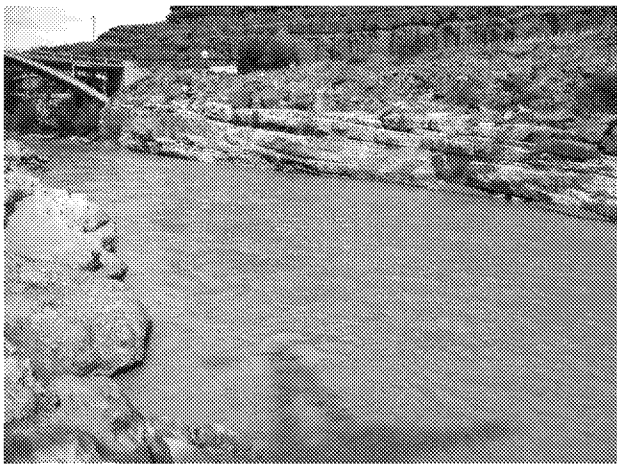


Photographs 4.6 – San Juan River Sample Site 29SANJUANR05

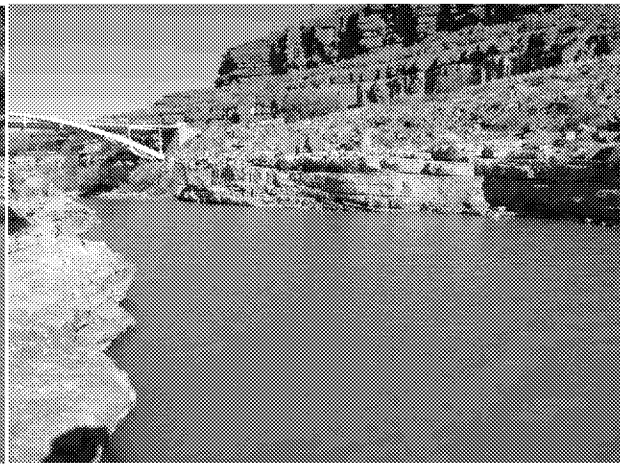


August 12, 2015 **September 24, 2015**

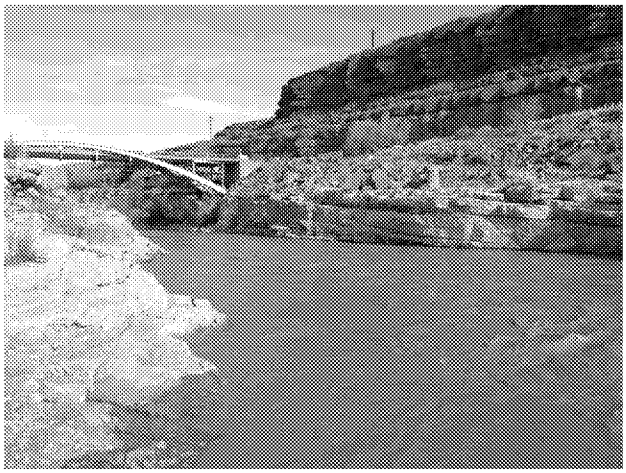
Photographs 4.6 – San Juan River Sample Site 29SANJUANR05 (continued)



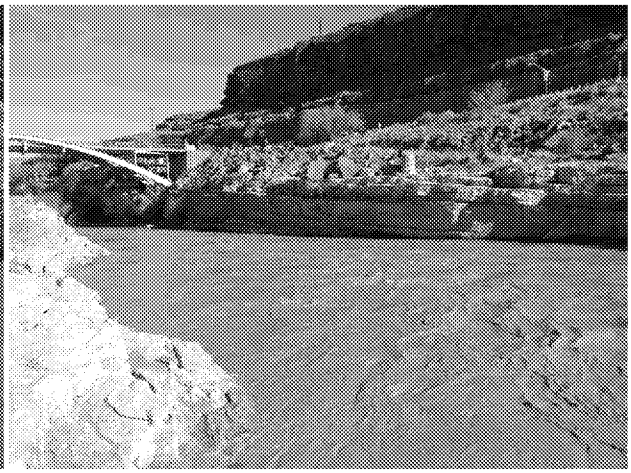
September 7, 2016



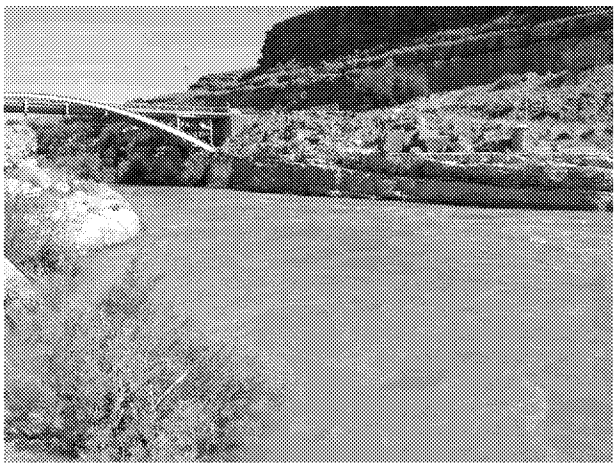
October 31, 2016



March 20, 2017



April 6, 2017



June 7, 2017

August 30, 2017

Table 4.6 – San Juan River – Water Quality Data Assessment Table

Site 29SANJUANR05

Site	Alias	Location
29SANJUANR05	29-05	San Juan River @ Mexican Hat

Total		Assessment period	
Year(s) sampled	# of Sample Events	Year(s) sampled*	# of Sample Events*
2015-2017	27	2015-2017	27

*Note that not all analytes were necessarily sampled each sample event.

	All samples		Assessment period	
Designated Use	Total number of exceedances	Total analytes exceeded	Total number of exceedances	Total analytes exceeded
Dom	39	10	39	10
FC	4	2	4	2
PrHC	10	2	10	2
ScHC	9	1	9	1
A&WHbt (A)	0	0	0	0
A&WHbt (C)	40	3	40	3
AgWS	7	3	7	3
LW	18	4	18	4

	Domestic Water Supply*					
	All samples			Assessment period		
Analyte	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	4	27	14.8%	4	27	14.8%
Barium (T)	1	27	3.7%	1	27	3.7%
Beryllium (T)	3	27	11.1%	3	27	11.1%
Boron (T)	1	27	3.7%	1	27	3.7%
Chromium (T)	2	27	7.4%	2	27	7.4%
Gross alpha (Adj)	12	26	46.2%	12	26	46.2%
Lead (T)	9	27	33.3%	9	27	33.3%
Manganese (T)	4	25	16.0%	4	25	16.0%
Radium-226/228 (T)	2	12	16.7%	2	12	16.7%
Thallium (T)	1	27	3.7%	1	27	3.7%

*Not a designated use for this water body, but results are provided for reference.

Table 4.6 – San Juan River Site – Water Quality Data Assessment Table (continued)

Analyte	Fish Consumption					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Mercury (T)	1	27	3.7%	1	27	3.7%
Thallium (T)	3	27	11.1%	3	27	11.1%

Analyte	Primary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Arsenic (T)	1	27	3.7%	1	27	3.7%
Lead (T)	9	27	33.3%	9	27	33.3%

Analyte	Secondary Human Contact					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Lead (T)	9	27	33.3%	9	27	33.3%

Analyte	Aquatic and Wildlife Habitat (Acute)					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Selenium (T)	0	27	0.0%	0	27	0.0%

Analyte	Aquatic and Wildlife Habitat (Chronic)					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (AS)	1	20	5.0%	1	20	5.0%
Mercury (T)	24	27	88.9%	24	27	88.9%
Selenium (T)	15	27	55.6%	15	27	55.6%

Analyte	Agricultural Water Supply					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Aluminum (T)	4	26	15.4%	4	26	15.4%
Molybdenum (T)	0	26	0.0%	0	26	0.0%
Radium-226/228 (T)	2	12	16.7%	2	12	16.7%
Selenium (T)	1	27	3.7%	1	27	3.7%

Analyte	Livestock Watering					
	All samples			Assessment period		
	Exceedances	n	Percent	Exceedances	n	Percent
Gross alpha (Adj)	12	26	46.2%	12	26	46.2%
Lead (T)	1	27	3.7%	1	27	3.7%
Radium-226/228 (T)	2	12	16.7%	2	12	16.7%
Vanadium (T)	3	26	11.5%	3	26	11.5%

4.6 San Juan River - Designated Use Support and Impairment Determination

- **Was the minimum number of samples to determine designated use support obtained during the assessment period? Yes.**
- **Category of Designated Use Support: Category 5b – At least one designated use is not supported and a review of the designated use and/or water quality standards will be conducted to determine if appropriate for the surface water body.**
- **Category 5b is specific to only the analytes listed above with 2 or more exceedances during the assessment period for the individual designated use. For analytes with 1 or less exceedances during the assessment period the designated use is supported for those analytes.**
- **Aluminum is an abundant element within the Navajo Nation and may be completely attributable to naturally occurring sources, not anthropogenic sources.**
- **The Agricultural Water Supply and Livestock Watering numeric surface water quality standards are being reviewed to determine toxicity to agricultural products, livestock, and human health.**

5.0 References

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NNEPA. July 23, 1999. Navajo Nation Clean Water Act.

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NNEPA. May 13, 2008. Navajo Nation Surface Water Quality Standards 2007

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United States Geological Survey. 1987. Hydrologic Unit Maps, United States Geological Survey Water- Supply Paper 2294.